

REMARKS

Claims 1-34 are pending in this application and claims 15-29 have been subjected to a restriction requirement and withdrawn from consideration. Applicant has amended the claims via the above Amendment to better comply with the Office's requirements as well as to expedite prosecution of the present application.

The Restriction Requirement

Applicant acknowledges the finality of the restriction requirement and withdrawal of claims 15-29 from examination.

Rejection – 35 U.S.C. § 112 ¶ 2

The Office has rejected claims 10, 12, and 14 under 35 U.S.C. § 112 ¶ 2 for the reasons noted in paragraphs 6-8 of the Office Action. Applicant has amended these claims as indicated above and, therefore, this rejection should be withdrawn.

Double Patenting

1. The Office has provisionally rejected claims 1-14 and 30-34 under the doctrine of obviousness-type double patenting over the claims of several co-pending applications in view of Erwin et al. (U.S. Patent No. 3755037) for the reasons listed on pages 4-6 of the Office Action. In essence, the Office argues that the claims of the co-pending applications teach the invention substantially as claimed except for a polygonal outer surface and a composite overwrap on that surface. The Office argues that Erwin et al. teach a contoured structural member with a polygonal outer surface and a composite overwrap (reinforcing strips 44) for the purpose of low

weight and cost, high strength and modulus of elasticity. The Office concludes it would have been obvious to combine the disclosure of Erwin et al. with the claims of the co-pending applications for the purpose of improved durability as taught by Erwin et al.

2. The Office has also provisionally rejected claim 8 under the doctrine of obviousness-type double patenting over the claims of several co-pending applications in view of Erwin et al. and further in view of Reid et al. (U.S. Patent No. 6308809) for the reasons listed on pages 7-8 of the Office Action. In essence, the Office argues that it would have been obvious to combine the disclosure of Erwin et al. and Reid et al. with the claims of the co-pending applications for the purpose of providing structures with reduced crush initiation forces for absorption.

Applicant respectfully disagrees with both of these rejections. The independent claims recite that the structural member contains a composite overwrap. The dependent claims contain the limitation that this composite overwrap reduces a secondary loading condition on a portion of the outer surface of the structural member (created by the polygonal shape as described below). The Office, however, has not shown that Erwin et al. teach or suggest either of these limitations in the present claims.

Erwin et al. disclose that the reinforcing strips 44 are for the handle of a tennis racket. The tennis racket is made by a molding process using two mold halves as shown in Figures 4-5. *See also column 3, line 43-44.* The cross-section of a mold half containing the components for the tennis racket is illustrated in Figure 8. *See column 3, line 60 through column 4, line 2.*

The reinforcing strips are made by placing one end of the strips 44 in the first mold half so that, as illustrated in Figures 4 and 5, the strips extend out one side of the mold. *See also column 4, line 13-15.* Then the various components of the tennis racket are placed in the first mold half and the other end of the strips 44 are "folded back" over the various components of the

handle. The second mold half is then placed on the first mold half to complete the mold. *See column 4, line 25-28.* The tennis racket is then completed by a molding process so that the reinforcing strips run along the length of the handle as depicted in Figures 4 and 5.

The Office has not shown that such longitudinal reinforcing strips are a composite overwrap as recited in the present independent claims. Paragraph 36 of the present specification describes a composite overwrap and the reason(s) why it is used.

Creating a polygonal shape, however, creates a secondary loading condition on the structural member. This loading condition is usually localized near the bond surface and can easily be great enough to explode the structural member from the inside. To protect against such a problem, that area of the structural member 2 is "overwrapped" with a composite collar comprising of fibers which are oriented around the circumference of the structural member. This prevents the structural member from exploding, while not adding much weight. The overwrap is located over the entire joint area with some extension past the joint to help with stress concentrations.

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Thus, the composite overwrap contains fibers that are oriented circumferentially around the composite member to protect against a secondary loading condition created by the polygonal outer shape. The Office has not shown, however, that the longitudinal reinforcing strips 44 of Erwin et al. are such a composite overwrap. Nor has the Office shown that the longitudinal reinforcing strips 44 of Erwin et al. reduce the secondary loading condition as recited in the dependent-claims.
intended use

Thus, the Office has not shown that Erwin et al. teach either the composite overwrap or its use to reduce the secondary loading condition. And the Office has not argued that such limitations would have been obvious in light of Erwin et al. And if the Office has not shown that Erwin et al. teach or suggest these limitations, the Office can not show that it would have been obvious to modify the claims of the co-pending applications to contain such limitations.

Thus, the Office has not substantiated a sufficient basis for these grounds of rejection and Applicant respectfully requests withdrawal of these rejections.

Rejection – 35 U.S.C. § 102(b) over Erwin et al.

The Office has rejected claims 1-7, 9-14, and 30-34 under 35 U.S.C. § 102 (b) as being anticipated by Erwin et al. for the reasons listed on pages 8-10 of the Office Action. Applicant respectfully traverses this rejection.

The independent claims recite that the structural member contains a composite overwrap. The dependent claims contain the limitation that this composite overwrap reduces a secondary loading condition on a portion of the outer surface of the structural member. The Office, however, has not shown that Erwin et al. anticipate either of these limitations.

As described above, Erwin et al. disclose the use of longitudinal reinforcing strips 44. The Office, however, has not shown that such longitudinal reinforcing strips are a composite overwrap as recited in the present independent claims. Nor has the Office shown that the longitudinal reinforcing strips 44 of Erwin et al. reduces the secondary loading condition as recited in the dependent claims.

Thus, the Office has not shown that Erwin et al. teach either the composite overwrap or its use to reduce the secondary loading condition. Accordingly, the Office has not substantiated that Erwin et al. anticipate claims 1-7, 9-14, and 30-32 and this ground of rejection should be withdrawn.

Rejection – 35 U.S.C. § 103 over Erwin et al. and Reid et al.

The Office has rejected claim 8 under 35 U.S.C. § 103 as being unpatentable over Erwin et al. in view of Reid et al. for the reasons listed on pages 9-10 of the Office Action. Applicant respectfully traverses this rejection.

The independent claims currently recite a structural member containing a composite overwrap on a portion of the polygonal outer surface of the structural member. The dependent claims contain the additional limitation that the composite overwrap reduces the secondary loading condition. As noted above, the Office has not substantiated that Erwin et al. teach a structural member with this recited limitation. Nor has the Office even argued that the skilled artisan would have considered such a limitation obvious in light of the disclosure of Erwin et al.

Neither has the Office substantiated that Reid et al. teach or suggest a structural member containing such a limitation. Reid et al. describe and illustrate a crash attenuation system for absorbing the energy from impact forces. *See Abstract and Figures*. The Office has not substantiated that Reid et al. teach the claimed structural member with this composite overwrap. Nor has the Office provided any reason to modify the teachings of Reid et al. to obtain a composite overwrap on a portion of a polygonal outer surface of the structural member. And since the Office has not shown that Reid et al. teach or suggest this claimed limitation, the Office cannot show that it would have been obvious to modify Erwin et al. to include such a limitation.


For the above reasons, the Office has not substantiated that the skilled artisan would have considered claim 8 obvious over the combined teachings of Erwin et al. and Reid et al. Accordingly, Applicant requests withdrawal of this rejection.

CONCLUSION

For the above reasons, Applicant respectfully requests the Office to withdraw the above grounds of rejection and allow the pending claims.

If there is any fee due in connection with the filing of this Amendment, including a fee for any extension of time not accounted for above, please charge the fee to our Deposit Account No. 18-0013.

Respectfully Submitted,

By 
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